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Current Trends

Update: Mortality Attributable to HIV Infection/AIDS Among Persons Aged 25–44 Years — United States, 1990 and 1991

During the 1980s, human immunodeficiency virus (HIV) infection emerged as a leading cause of death in the United States (*1*). This report updates national trends in deaths caused by HIV infection during 1990 and 1991 and indicates that HIV infection/acquired immunodeficiency syndrome (AIDS) continues to cause an increasing proportion of all deaths.

Data presented in this report were obtained from death certificates filed in all 50 states and the District of Columbia. Cause of death was reported by attending physicians, medical examiners, and coroners; demographic characteristics were recorded by funeral directors. Data for 1991 are provisional (*2*); 1990 is the latest year for which final and more detailed mortality data are available (*3*).

In 1991, 29,850 U.S. residents died from HIV infection; of these, 3% were aged <25 years; 74%, 25–44 years; and 23%, ≥45 years. HIV infection was the ninth leading cause of death overall, accounting for 1% of all deaths, and the third leading cause of death among persons aged 25–44 years, accounting for 15% of deaths in this age group (Table 1). In 1990, HIV infection was the second leading cause of death among men aged 25–44 years and the sixth leading cause of death among women in this age group (accounting for 17% and 5% of deaths, respectively) (Table 2). In 1991, the proportion of deaths caused by HIV infection in these two groups increased to 19% and 6%, respectively.

While death rates from most other leading causes of death declined or remained relatively stable for men and women aged 25–44 years, the death rate for HIV infection steadily increased (Figures 1 and 2). In 1991, the death rate for HIV infection for men aged 25–44 years was seven times that for women in this age group; however, since 1985, proportionate increases in the rate were greater for women than for men.

For men aged 25–44 years, the proportion of deaths caused by HIV infection in 1990 was 22% for Hispanics, 19% for blacks (non-Hispanic), 15% for whites (non-Hispanic), 7% for Asians/Pacific Islanders (non-Hispanic), and 3% for American Indians/Alaskan

HIV Infection/AIDS Mortality — Continued

Natives (non-Hispanic) (Table 3). HIV death rates* varied substantially by race/ethnicity: for men aged 25–44 years, rates for black, Hispanic, American Indian/Alaskan Native, and Asian/Pacific Islander men were approximately three times, twice, one third, and one fourth, respectively, the rate for white men (Table 3).

*In determining death rates by race/ethnicity, data were excluded from four states (Connecticut, Louisiana, New Hampshire, and Oklahoma) because information concerning Hispanic ethnicity was available for less than 85% of deaths. The criteria used in this report for determining which states were excluded from analysis of mortality data by Hispanic ethnicity differ somewhat from those used by CDC's National Center for Health Statistics; therefore, numbers of deaths in Table 3 differ from those published in Table 17 of reference *3*.

TABLE 1. Percentage of deaths caused by HIV infection, rank of HIV infection among all causes of death,* and death rate for HIV infection, by year of death and age group — United States, 1987–1991†

	All ages					Aged 25–44 yrs				
		HIV-related deaths					HIV-related deaths			
Year	Total deaths	Deaths	(%)§	Rank	Death rate¶	Total deaths	Deaths	(%)	Rank	Death rate
1987	2,123,323	13,468	(0.6)	15	5.5	131,164	9,820	(7.5)	6	12.7
1988	2,167,999	16,602	(0.8)	15	6.8	136,591	12,220	(8.9)	4	15.5
1989	2,150,466	22,082	(1.0)	11	8.9	141,443	16,322	(11.5)	3	20.3
1990	2,148,463	25,188	(1.2)	10	10.1	143,653	18,748	(13.1)	3	23.3
1991	2,165,000	29,850	(1.4)	9	11.8	147,340	22,050	(15.0)	3	26.8

*Based on the proportion of deaths from each of the cause categories used by CDC's National Center for Health Statistics to rank the 15 leading causes of death (*3*).
†Data for 1991 are provisional; data for earlier years are final.
§Percentage of deaths caused by HIV infection among total deaths in the age group.
¶Deaths caused by HIV infection per 100,000 population.

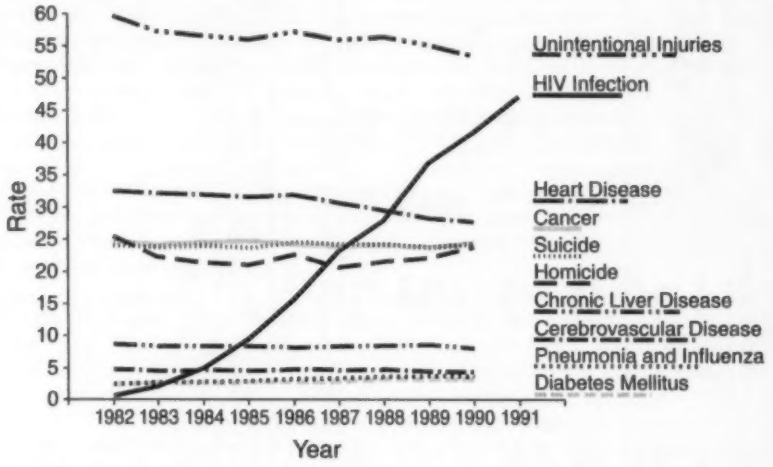
TABLE 2. Percentage of deaths caused by HIV infection, rank of HIV infection among all causes of death,* and death rate for HIV infection for persons aged 25–44 years, by sex and year of death — United States, 1987–1991†

	Men					Women				
		HIV-related deaths					HIV-related deaths			
Year	Total deaths	Deaths	(%)§	Rank	Death rate¶	Total deaths	Deaths	(%)	Rank	Death rate
1987	91,082	8,867	(9.7)	5	23.2	40,082	953	(2.4)	8	2.5
1988	95,419	10,935	(11.5)	3	28.1	41,172	1,285	(3.1)	8	3.3
1989	99,482	14,646	(14.7)	2	37.0	41,961	1,676	(4.0)	6	4.2
1990	101,519	16,717	(16.5)	2	41.7	42,134	2,031	(4.8)	6	5.0
1991	104,380	19,380	(18.6)	—	47.3	42,960	2,670	(6.2)	—	6.4

*Based on the proportion of deaths from each of the cause categories used by CDC's National Center for Health Statistics to rank the 15 leading causes of death (*3*). The rank could not be determined for 1991 because provisional sex- and age-specific data on deaths from other causes were unavailable for comparison.
†Data for 1991 are provisional; data for earlier years are final.
§Percentage of deaths caused by HIV infection among total deaths in the age and sex group.
¶Deaths caused by HIV infection per 100,000 population.

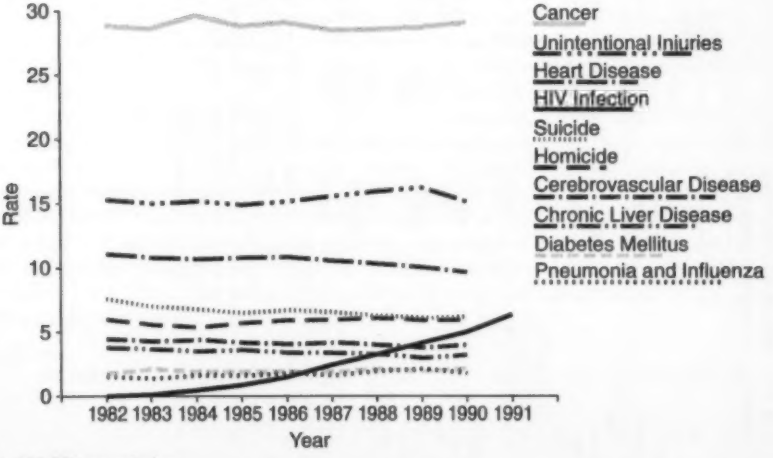
HIV Infection/AIDS Mortality — Continued

FIGURE 1. Death rates* for leading causes of death for men aged 25–44 years, by year — United States, 1982–1991†



*Per 100,000 population.
†National vital statistics based on underlying cause of death, using final data for 1982–1990 and provisional data for HIV infection for 1991.

FIGURE 2. Death rates* for leading causes of death for women aged 25–44 years, by year — United States, 1982–1991†



*Per 100,000 population.
†National vital statistics based on underlying cause of death, using final data for 1982–1990 and provisional data for HIV infection for 1991.

TABLE 3. Percentage of deaths caused by HIV infection, rank of HIV infection among all causes of death,* and death rate for HIV infection among persons aged 25–44 years, by sex and race/ethnicity — United States, 1990

Race/ Ethnicity	Men					Women				
		HIV-related deaths					HIV-related deaths			
	Total deaths	Deaths	(%)†	Rank	Death rate§	Total deaths	Deaths	(%)	Rank	Death rate
Non-Hispanic										
White	**60,710**	9,170	(15.1)	2	31.4	**25,354**	434	(1.7)	9	1.5
Black	**22,860**	4,352	(19.0)	2	105.0	**10,584**	1,160	(11.0)	3	24.4
Asian/ Pacific Islander	**1,255**	90	(7.2)	6	7.4	**711**	6	(0.8)	12	0.5
American Indian/ Alaskan Native	**894**	24	(2.7)	7	10.0	**390**	3	(0.8)	11	1.2
Hispanic										
Puerto Rican	**1,897**	728	(38.4)	1	—	**644**	192	(29.8)	1	—
Cuban	**554**	223	(40.3)	1	—	**106**	10	(9.4)	5	—
Mexican	**4,985**	659	(13.2)	3	—	**1,287**	31	(2.4)	8	—
Other	**1,187**	231	(19.5)	3	—	**366**	21	(5.7)	4	—
Unspecified nationality	**1,722**	382	(22.2)	2	—	**459**	58	(12.6)	3	—
Total	**10,345**	2,223	(21.5)	2	59.1	**2,862**	312	(10.9)	3	8.8

*Based on the proportion of deaths from each of the cause categories used by CDC's National Center for Health Statistics to rank the 15 leading causes of death.

†Percentage of deaths caused by HIV infection among total deaths in the age, sex, and racial/ethnic group.

§Deaths caused by HIV infection per 100,000 population, excluding data from four states (Connecticut, Louisiana, New Hampshire, and Oklahoma) because information concerning Hispanic ethnicity was available for less than 85% of deaths. The criteria used in this report for determining which states were excluded from analysis of mortality data by Hispanic ethnicity differ somewhat from those used by CDC's National Center for Health Statistics; therefore, numbers of deaths differ from those published in Table 17 of reference *3*. Death rates could not be determined by national origin for Hispanics, because information on national origin was available for less than 85% of their deaths in 28 states and age-specific population data were unavailable by national origin.

HIV Infection/AIDS Mortality — Continued

For women aged 25–44 years, HIV infection accounted for 11% of deaths in 1990 for both black and Hispanic women; however, the HIV death rate for black women was nearly three times that for Hispanic women (Table 3). Both the proportions of deaths caused by HIV infection and the HIV death rates were substantially higher for black and Hispanic women than for women of white and other racial/ethnic groups.

Among Hispanics aged 25–44 years, the proportion of deaths caused by HIV infection in 1990 varied widely by national origin (including ancestry, not necessarily birthplace) (Table 3). In particular, among men of Cuban and Puerto Rican origin, HIV infection was the leading cause of death, accounting for approximately 40% of all deaths, while among men of Mexican origin, the proportion was lower (13%). In this age group, HIV infection was the leading cause of death among women of Puerto Rican origin—accounting for approximately 30% of all deaths—but caused a smaller proportion of deaths among women of Cuban origin (9%), Mexican origin (2%), and other Latin American origin (6%).

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Editorial Note: The findings in this report underscore the role of HIV infection as a cause of death among men and women aged 25–44 years in the United States. Although deaths from all causes in this age group comprised only 7% of total U.S. deaths in 1991 (*2*), they impose a disproportionately high impact on society because of the loss of productive years of life and the loss of parents from families with young children. The impact of HIV infection on death patterns is even greater in many large cities than in the total U.S. population. For example, for persons aged 25–44 years in 1990, HIV was the leading cause of death among men in 64 (37%) of 172 cities with populations of at least 100,000 and among women in nine (5%) such cities (*4*).

In this report, the finding that rates of death for HIV infection were higher for blacks and Hispanics—particularly Hispanics of Puerto Rican origin—than for other racial/ethnic groups is consistent with reported rates for the incidence of AIDS (*5,6*). Such comparisons of racial/ethnic groups may assist in targeting prevention efforts to groups at greatest risk. Differences in risk among racial/ethnic groups may reflect social, economic, behavioral, or other factors, rather than race/ethnicity directly (*7*). Further analyses are needed to better understand these associations.

The impact of HIV infection on U.S. mortality patterns is greater than indicated in this report. This analysis was based on the underlying cause of death recorded on death certificates; however, previous studies suggest that, for persons aged 25–44 years, deaths for which HIV infection is designated as the underlying cause represent 65%–85% of all HIV-related deaths among men and 55%–80% of those among women (*8,9*). In addition, provisional data for 1992 suggest that the number and proportion of deaths caused by HIV infection will increase beyond the levels described in this report (*10*). Increased prevention efforts to interrupt transmission of HIV are needed to decrease morbidity and mortality from HIV infection.

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HIV Infection/AIDS Mortality — Continued

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International Notes

Progress Toward Global Eradication of Poliomyelitis, 1988–1991

The report of the last case of smallpox from Somalia in 1977 demonstrated that an infectious disease could be eradicated globally. Because polioviruses have no animal reservoir and do not survive for long periods of time in the environment, and because lifelong immunity to paralytic poliomyelitis is conferred by existing, effective vaccines, poliomyelitis has been considered a candidate for eradication (*1*). In 1985, the Pan American Health Organization (PAHO) initiated a regional poliomyelitis eradication program. Based on the success of this program and high vaccination levels achieved worldwide by the Expanded Program on Immunization (EPI), in May 1988, the World Health Assembly of the World Health Organization (WHO) adopted a resolution to eradicate poliomyelitis globally by the year 2000. This report summarizes progress of the global poliomyelitis eradication initiative from 1988 through 1991*.

Global. Reported global vaccination coverage with three doses of oral poliovirus vaccine (OPV3) by age 1 year increased from 67% in 1988 to 84% in 1991 (Figure 1). During the same period, reported cases of poliomyelitis decreased 56%, from 32,286 to 14,176 (Figure 1). From 1988 through 1991, there were substantial decreases in the number of countries/territories reporting poliomyelitis cases (88 [45%] of 196 and 70 [34%] of 208, respectively) and the number of countries reporting more than 10 cases per year (56 [29%] and 38 [18%], respectively) (Figure 2). In addition, the number of countries reporting zero endemic cases increased from 107 (55%) to 129 (61%)†.

African Region. Reported coverage with OPV3 increased from 44% to 57%, while reported cases of poliomyelitis decreased from 4546 to 2623; the number of countries in the region reporting poliomyelitis cases decreased from 37 (79%) of 47 to 25 (53%)

*Based on surveillance data submitted to the EPI; because 1992 figures are provisional, 1991 data were used for global and regional disease incidence.
†The difference between the number of countries reporting poliomyelitis cases or zero cases and the total number of countries reflects those not submitting reports.

Eradication of Poliomyelitis — Continued

of 47. In 1991, the African Region reported 19% of the global total of poliomyelitis cases.

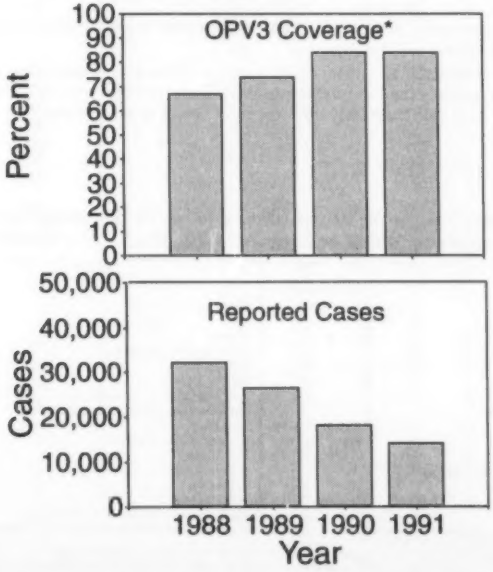
Region of the Americas. Reported coverage with OPV3 increased from 82% to 89%, while reported cases of poliomyelitis decreased from 340 to nine; the number of countries in the region reporting poliomyelitis cases decreased from 13 (28%) of 47 to two (4%) of 47. This region has reported no confirmed cases of poliomyelitis since September 1991 in Peru.

Eastern Mediterranean Region. Reported coverage with OPV3 increased from 69% to 80%, while reported cases of poliomyelitis decreased from 2332 to 2035; the number of countries in the region reporting poliomyelitis cases decreased from 17 (71%) of 24 to 15 (65%) of 23. In 1991, the Eastern Mediterranean Region reported 14% of the global total of poliomyelitis cases; 87% of the regional total were reported from Pakistan and Egypt. Despite OPV3 coverage of greater than 85%, small outbreaks also occurred in Oman (1988–1989) and Jordan (1991–1992); 51% of 118 persons with acute poliomyelitis in Oman and 53% of 32 persons with acute poliomyelitis in Jordan had received OPV3.

European Region. Reported coverage with OPV3 decreased from 86% to 82%, while reported cases of poliomyelitis increased from 206 to 313; the number of countries in the region reporting poliomyelitis cases increased from seven (23%) of 31 to 15 (33%)

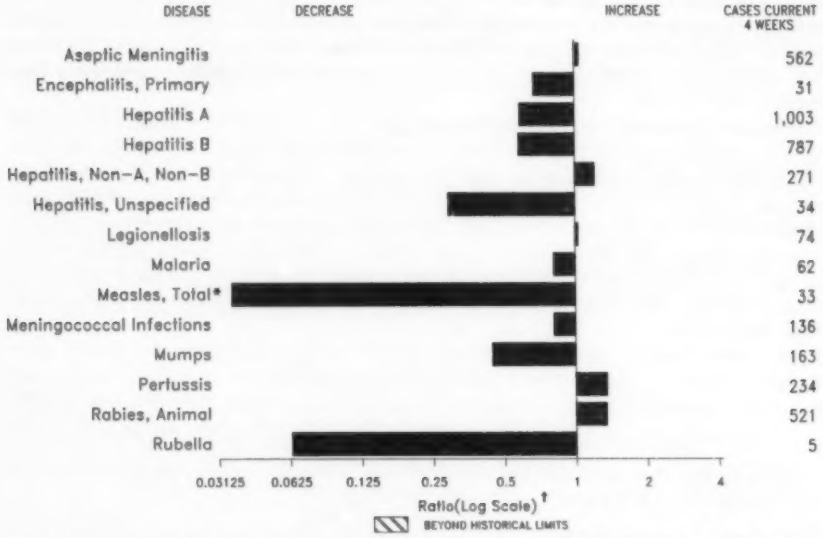
(Continued on page 493)

FIGURE 1. Reported coverage with three doses of oral poliovirus vaccine (OPV3) and poliomyelitis cases, by year — worldwide, 1988–1991



*Percentage of children who have received at least three doses of oral poliovirus vaccine by age 1 year.

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending June 26, 1993, with historical data — United States



*The large apparent decrease in reported cases of measles (total) reflects dramatic fluctuations in the historical baseline.

† Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending June 26, 1993 (25th Week)

	Cum. 1993		Cum. 1993
AIDS*	51,608	Measles: imported	17
Anthrax	-	indigenous	148
Botulism: Foodborne	7	Plague	3
Infant	12	Poliomyelitis, Paralytic§	-
Other	2	Psittacosis	26
Brucellosis	36	Rabies, human	-
Cholera	14	Syphilis, primary & secondary	12,737
Congenital rubella syndrome	5	Syphilis, congenital, age < 1 year	-
Diphtheria	-	Tetanus	14
Encephalitis, post-infectious	93	Toxic shock syndrome	114
Gonorrhea	180,883	Trichinosis	8
Haemophilus influenzae (invasive disease)†	628	Tuberculosis	9,660
Hansen Disease	88	Tularemia	44
Leptospirosis	17	Typhoid fever	149
Lyme Disease	1,916	Typhus fever, tickborne (RMSF)	77

*Updated monthly; last update June 5, 1993.
†Of 573 cases of known age, 191 (33%) were reported among children less than 5 years of age.
§No cases of suspected poliomyelitis have been reported in 1993; 4 cases of suspected poliomyelitis were reported in 1992; 6 of the 9 suspected cases with onset in 1991 were confirmed; the confirmed cases were vaccine associated.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending June 26, 1993, and June 20, 1992 (25th Week)

Reporting Area	AIDS*	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993
UNITED STATES	51,608	3,303	250	83	180,883	233,891	9,929	5,583	2,219	298	539	1,916
NEW ENGLAND	2,166	45	4	4	3,810	4,819	155	161	218	5	14	247
Maine	59	10	1	-	41	40	8	9	-	-	4	3
N.H.	63	9	-	2	30	60	14	53	197	1	2	20
Vt.	14	7	2	-	14	13	3	3	2	-	-	1
Mass.	1,188	10	1	2	1,309	1,748	47	53	15	4	5	17
R.I.	104	9	-	-	174	362	49	14	4	-	3	54
Conn.	738	-	-	-	2,242	2,596	34	29	-	-	-	152
MID. ATLANTIC	11,379	313	11	6	20,335	24,550	587	725	162	4	114	1,331
Upstate N.Y.	1,938	123	3	3	4,037	5,070	179	200	93	1	35	989
N.Y. City	6,197	104	1	-	5,057	8,400	177	121	1	-	3	3
N.J.	2,072	-	-	-	3,410	3,387	156	209	48	-	16	129
Pa.	1,172	86	7	3	7,821	7,693	75	195	20	3	60	230
E.N. CENTRAL	4,160	435	76	15	34,957	43,922	976	572	358	8	143	17
Ohio	662	133	25	3	9,439	13,389	153	112	29	-	74	13
Ind.	502	65	6	7	3,695	4,039	412	110	6	1	30	1
Ill.	1,442	87	16	-	11,381	14,409	293	123	21	2	5	1
Mich.	1,083	140	25	5	7,877	10,096	112	222	281	5	26	2
Wis.	471	10	4	-	2,565	1,989	6	5	21	-	8	-
W.N. CENTRAL	2,163	192	11	-	8,945	12,498	1,250	337	97	5	35	37
Minn.	431	46	5	-	320	1,409	205	31	3	4	1	4
Iowa	130	42	1	-	602	833	16	12	4	1	5	5
Mo.	1,270	45	-	-	5,521	6,812	810	250	71	-	11	7
N. Dak.	-	5	2	-	23	43	43	-	-	-	1	1
S. Dak.	20	7	3	-	150	84	10	-	-	-	-	-
Nebr.	100	4	-	-	476	754	113	8	9	-	14	1
Kans.	212	43	-	-	1,853	2,563	53	36	10	-	3	19
S. ATLANTIC	10,888	811	45	36	49,609	73,121	616	984	271	44	91	208
Del.	208	8	3	-	642	838	6	73	63	-	7	106
Md.	1,216	70	10	-	7,726	7,010	85	135	6	5	22	30
D.C.	548	19	-	-	2,681	3,535	3	14	-	-	12	2
Va.	731	79	15	3	5,651	8,672	84	73	20	18	2	19
W. Va.	36	7	7	-	279	439	3	18	16	-	1	2
N.C.	453	63	9	-	11,777	11,706	31	154	31	-	14	28
S.C.	673	5	-	-	4,842	5,389	7	18	-	1	10	1
Ga.	1,562	53	1	-	4,660	23,200	57	35	21	-	12	-
Fla.	5,459	507	-	33	11,351	12,332	360	464	114	20	11	20
E.S. CENTRAL	1,396	178	9	4	20,782	22,991	122	608	437	1	22	7
Ky.	161	70	4	4	2,193	2,345	64	46	5	-	8	2
Tenn.	528	27	4	-	6,326	7,345	23	505	424	-	11	3
Ala.	463	49	1	-	7,418	7,843	25	54	3	1	1	2
Miss.	244	32	-	-	4,845	5,458	10	3	5	-	2	-
W.S. CENTRAL	5,311	298	19	-	21,411	23,806	924	753	101	81	15	10
Ark.	227	15	-	-	3,992	3,955	27	29	2	-	-	1
La.	727	24	-	-	5,548	5,713	38	94	35	1	2	-
Okla.	423	1	4	-	1,738	2,340	53	115	26	6	9	5
Tex.	3,934	258	15	-	10,135	11,798	806	515	38	74	4	4
MOUNTAIN	2,599	184	12	3	5,148	5,919	2,012	280	151	49	48	4
Mont.	15	-	-	1	22	51	54	4	-	-	5	-
Idaho	43	6	-	-	87	59	95	23	-	1	1	-
Wyo.	28	3	-	-	41	25	10	13	45	-	5	2
Colo.	868	43	3	-	1,572	2,188	492	32	24	29	4	-
N. Mex.	212	37	3	2	452	432	171	120	50	2	3	1
Ariz.	881	63	4	-	1,920	1,982	690	43	9	7	9	-
Utah	185	7	1	-	164	119	457	21	19	10	7	1
Nev.	367	25	1	-	890	1,063	43	24	4	-	14	-
PACIFIC	11,546	847	63	15	15,886	22,265	3,287	1,183	424	101	57	55
Wash.	764	-	-	-	1,850	2,020	363	98	93	7	8	1
Oreg.	502	-	-	-	927	737	52	21	8	-	-	-
Calif.	10,149	795	60	15	12,637	18,905	2,415	1,028	315	91	44	53
Alaska	12	4	2	-	221	359	410	6	6	-	-	-
Hawaii	119	48	1	-	251	244	47	10	2	3	5	1
Guam	-	2	-	-	38	36	2	2	-	1	-	-
P.R.	1,561	27	-	-	209	84	36	180	22	2	-	-
V.I.	33	-	-	-	58	54	-	2	-	-	-	-
Amer. Samoa	-	-	-	-	14	20	10	-	-	-	-	-
C.N.M.I.	-	2	-	-	42	32	-	-	-	1	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly; last update June 5, 1993.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 26, 1993, and June 20, 1992 (25th Week)

Reporting Area	Malaria	Measles (Rubeola)					Meningococcal infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1993	1993	Cum. 1993	1993	Cum. 1993	Cum. 1992	Cum. 1993	1993	Cum. 1993	1993	Cum. 1993	Cum. 1992	1993	Cum. 1993	Cum. 1992
UNITED STATES	439	3	148	1	17	1,951	1,300	32	888	44	1,233	783	2	107	106
NEW ENGLAND	22	-	42	-	2	44	56	-	5	4	295	67	-	1	6
Maine	1	-	-	-	-	-	5	-	-	-	8	2	-	1	1
N.H.	5	-	-	-	-	12	12	-	-	4	192	20	-	-	-
Vt.	1	-	30	-	1	-	4	-	-	-	42	1	-	-	-
Mass.	2	-	3	-	-	8	16	-	-	-	19	33	-	-	-
R.I.	2	-	-	-	1	20	1	-	2	-	2	-	-	-	4
Conn.	11	-	9	-	-	4	18	-	3	-	32	11	-	-	1
MID. ATLANTIC	81	-	6	-	2	205	165	2	62	4	178	78	-	26	11
Upstate N.Y.	28	-	-	-	1	108	76	2	24	4	77	24	-	4	8
N.Y. City	24	-	2	-	-	38	19	-	-	-	7	9	-	15	-
N.J.	21	-	4	-	1	54	21	-	8	-	21	19	-	6	2
Pa.	8	-	-	-	-	5	49	-	30	-	71	26	-	1	1
E.N. CENTRAL	29	-	1	-	-	32	184	3	133	7	177	71	-	2	7
Ohio	6	-	-	-	-	5	56	2	55	3	111	23	-	1	-
Ind.	4	-	-	-	-	19	30	-	3	2	26	12	-	-	-
Ill.	14	-	1	-	-	5	57	-	29	-	19	11	-	-	7
Mich.	5	-	-	-	-	2	40	1	46	2	18	3	-	1	-
Wis.	-	-	-	-	-	1	1	-	-	-	3	22	-	-	-
W.N. CENTRAL	13	-	1	-	2	7	80	-	25	3	88	55	-	1	5
Minn.	3	-	-	-	-	6	2	-	-	-	43	18	-	-	-
Iowa	1	-	-	-	-	1	15	-	7	-	1	1	-	-	-
Mo.	3	-	1	-	-	-	32	-	13	3	24	22	-	1	1
N. Dak.	2	-	-	-	-	-	3	-	4	-	3	7	-	-	-
S. Dak.	2	-	-	-	-	-	3	-	-	-	1	4	-	-	-
Nebr.	1	-	-	-	-	-	4	-	1	-	5	2	-	-	-
Kans.	1	-	-	-	2	-	21	-	-	-	11	1	-	-	4
S. ATLANTIC	133	-	20	-	3	112	268	14	289	7	127	62	2	9	7
Del.	1	-	3	-	-	1	11	-	4	-	1	-	-	2	-
Md.	13	-	-	-	2	15	25	1	50	1	41	12	2	3	4
D.C.	5	-	-	-	-	-	4	-	-	-	2	-	-	-	-
Va.	8	-	-	-	1	11	24	2	16	1	11	4	-	-	-
W. Va.	2	-	-	-	-	-	10	-	6	-	6	2	-	-	-
N.C.	78	-	-	-	-	24	47	10	167	3	23	14	-	-	-
S.C.	-	-	-	-	-	29	20	1	14	-	5	7	-	-	-
Ga.	3	-	-	-	-	-	61	-	9	-	5	8	-	-	-
Fla.	23	-	17	-	-	32	66	-	23	2	33	15	-	4	3
E.S. CENTRAL	12	-	1	-	-	449	82	1	33	7	58	13	-	-	1
Ky.	-	-	-	-	-	432	16	-	-	-	3	-	-	-	-
Tenn.	7	-	-	-	-	-	17	1	10	3	33	5	-	-	1
Ala.	3	-	1	-	-	-	30	-	18	4	20	7	-	-	-
Miss.	2	-	-	-	-	17	19	-	5	-	2	1	-	-	-
W.S. CENTRAL	11	-	1	-	-	999	114	11	132	-	32	105	-	12	6
Ark.	2	-	-	-	-	-	12	-	4	-	2	6	-	-	-
La.	-	-	1	-	-	-	24	-	11	-	5	-	-	1	-
Okla.	4	-	-	-	-	11	10	5	7	-	12	13	-	1	-
Tex.	5	-	-	-	-	988	68	6	110	-	13	86	-	10	6
MOUNTAIN	13	-	2	-	-	12	111	-	35	7	87	118	-	4	4
Mont.	2	-	-	-	-	-	10	-	-	-	-	1	-	-	-
Idaho	-	-	-	-	-	-	7	-	5	2	17	14	-	1	1
Wyo.	-	-	-	-	-	1	2	-	2	-	1	-	-	-	-
Colo.	7	-	2	-	-	11	16	-	8	5	33	21	-	-	-
N. Mex.	4	-	-	-	-	-	3	N	N	-	19	29	-	-	-
Ariz.	-	-	-	-	-	-	61	-	6	-	10	37	-	1	2
Utah	-	-	-	-	-	-	5	-	3	-	7	15	-	1	1
Nev.	-	-	-	-	-	-	7	-	11	-	-	1	-	1	-
PACIFIC	125	3	74	1	8	91	240	1	174	5	193	214	-	52	59
Wash.	13	-	-	-	-	10	37	-	8	1	20	56	-	-	6
Oreg.	3	-	-	-	-	-	19	N	N	-	3	14	-	1	1
Calif.	106	3	64	1†	3	47	166	1	147	4	160	136	-	30	36
Alaska	-	-	-	-	-	9	10	-	5	-	3	-	-	1	-
Hawaii	3	-	10	-	5	25	8	-	14	-	7	8	-	20	16
Guam	1	U	2	U	-	10	1	U	6	U	-	-	U	-	1
P.R.	-	-	122	-	-	244	6	-	1	-	1	9	-	-	-
V.I.	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-
Amer. Samoa	-	-	1	-	-	-	-	-	-	-	2	6	-	-	-
C.N.M.I.	-	-	-	-	1	-	-	-	11	-	-	1	-	-	-

*For measles only, imported cases include both out-of-state and international importations.
N: Not notifiable U: Unavailable † International § Out-of-state

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 26, 1993, and June 20, 1992 (25th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-Shock Syndrome	Tuberculosis		Tularemia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993
UNITED STATES	12,737	16,478	114	9,660	9,864	44	149	77	3,633
NEW ENGLAND	215	315	5	189	162	-	8	1	470
Maine	3	-	1	7	13	-	-	-	-
N.H.	21	24	2	4	-	-	-	-	30
Vt.	1	1	-	3	3	-	-	-	16
Mass.	86	151	1	112	74	-	6	1	76
R.I.	7	16	1	28	13	-	-	-	-
Conn.	97	123	-	35	59	-	2	-	348
MID. ATLANTIC	1,243	2,320	23	2,108	2,389	-	44	6	1,386
Upstate N.Y.	103	187	12	189	300	-	9	1	1,036
N.Y. City	628	1,280	1	1,284	1,394	-	26	-	-
N.J.	171	325	-	330	403	-	6	4	205
Pa.	341	528	10	305	292	-	3	1	145
E.N. CENTRAL	1,981	2,402	36	1,038	1,000	3	14	5	35
Ohio	577	350	15	148	156	1	5	4	4
Ind.	177	114	1	113	82	1	1	-	-
Ill.	732	1,098	5	528	489	-	4	1	4
Mich.	298	460	15	206	231	1	4	-	2
Wis.	197	380	-	43	42	-	-	-	25
W.N. CENTRAL	783	655	8	214	232	13	2	6	176
Minn.	14	44	2	26	60	-	-	-	23
Iowa	32	21	4	22	21	-	-	-	34
Mo.	652	489	-	115	94	4	2	4	5
N. Dak.	-	1	-	2	3	-	-	-	36
S. Dak.	1	-	-	10	14	7	-	2	19
Nebr.	10	19	-	10	13	-	-	-	2
Kans.	74	81	2	29	27	2	-	-	57
S. ATLANTIC	3,431	4,638	13	1,690	1,878	1	18	27	1,007
Del.	65	111	1	21	25	-	1	1	77
Md.	182	348	-	175	130	-	3	2	296
D.C.	196	209	-	80	59	-	-	-	6
Va.	321	386	3	217	133	-	1	2	189
W. Va.	3	9	-	41	30	-	-	-	41
N.C.	957	1,140	3	244	253	-	-	16	39
S.C.	538	633	-	204	193	-	-	1	84
Ga.	569	951	-	360	423	-	1	1	233
Fla.	600	851	6	348	632	1	12	4	42
E.S. CENTRAL	1,812	2,161	4	867	706	3	2	8	45
Ky.	146	66	2	183	185	-	-	3	7
Tenn.	522	605	1	144	164	2	-	3	-
Ala.	406	855	1	232	202	1	2	-	38
Miss.	738	635	-	108	155	-	-	2	-
W.S. CENTRAL	2,694	2,802	2	946	929	17	2	22	299
Ark.	459	438	-	85	79	10	-	-	16
La.	1,161	1,231	-	-	87	-	1	1	1
Okla.	187	123	2	151	68	4	-	21	58
Tex.	887	1,010	-	710	695	3	1	-	224
MOUNTAIN	113	195	7	219	246	2	5	2	47
Mont.	1	3	-	5	-	-	-	-	9
Idaho	-	1	1	6	12	-	-	-	1
Wyo.	4	1	-	1	-	1	-	2	6
Colo.	32	26	1	8	17	-	4	-	1
N. Mex.	19	19	-	35	39	-	-	-	3
Ariz.	50	97	1	108	112	-	1	-	25
Utah	2	5	3	11	37	1	-	-	-
Nev.	5	41	1	45	29	-	-	-	2
PACIFIC	465	990	16	2,589	2,322	5	54	-	168
Wash.	27	49	2	127	143	1	4	-	-
Oreg.	47	24	-	53	49	2	-	-	-
Calif.	387	910	14	2,255	1,979	2	48	-	152
Alaska	2	3	-	24	36	-	-	-	16
Hawaii	2	4	-	130	115	-	2	-	-
Guam	1	2	-	28	34	-	-	-	-
P.R.	289	146	-	93	120	-	-	-	24
V.I.	28	31	-	2	3	-	-	-	-
Amer. Samoa	-	-	-	1	-	-	-	-	-
C.N.M.I.	2	4	-	18	15	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending June 26, 1993 (25th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	630	450	104	53	14	9	56
Boston, Mass.	170	106	30	21	6	7	21
Bridgeport, Conn.	49	38	1	5	4	1	7
Cambridge, Mass.	31	24	4	3	-	-	2
Fall River, Mass.	29	23	5	1	-	-	-
Hartford, Conn.	55	34	14	5	1	1	3
Lowell, Mass.	31	18	10	3	-	-	2
Lynn, Mass.	14	12	2	-	-	-	1
New Bedford, Mass.	23	22	1	-	-	-	2
New Haven, Conn.	44	27	8	8	1	-	2
Providence, R.I.	49	34	12	3	-	-	2
Somerville, Mass.	6	4	1	1	-	-	-
Springfield, Mass.	46	38	8	-	-	-	5
Waterbury, Conn.	22	18	4	-	-	-	-
Worcester, Mass.	61	52	4	3	2	-	9
MID. ATLANTIC	2,691	1,864	566	324	63	73	121
Albany, N.Y.	33	19	9	1	2	2	2
Allentown, Pa.	17	12	4	1	-	-	1
Buffalo, N.Y.	92	63	18	5	3	2	2
Camden, N.J.	35	18	10	3	1	3	2
Elizabeth, N.J.	25	19	3	2	-	1	2
Erie, Pa.§	40	28	9	1	1	1	3
Jersey City, N.J.	53	33	12	5	2	1	3
New York City, N.Y.	1,379	819	308	199	24	29	46
Newark, N.J.	84	35	18	23	3	4	7
Paterson, N.J.	21	10	2	7	1	1	-
Philadelphia, Pa.	504	307	107	53	22	15	29
Pittsburgh, Pa.§	59	40	10	5	-	4	3
Reading, Pa.	10	7	-	2	-	1	-
Rochester, N.Y.	112	90	17	3	1	1	12
Schenectady, N.Y.	16	12	1	1	-	2	1
Scranton, Pa.§	35	34	1	-	-	-	2
Syracuse, N.Y.	94	64	20	4	2	4	6
Trenton, N.J.	27	15	4	6	-	2	-
Utica, N.Y.	27	18	8	1	-	-	-
Yonkers, N.Y.	28	21	4	2	1	-	1
E.N. CENTRAL	2,289	1,364	483	226	117	99	123
Akron, Ohio	44	32	9	2	-	1	-
Canton, Ohio	48	36	8	3	1	-	3
Chicago, Ill.	590	217	148	106	72	49	20
Cincinnati, Ohio	80	60	12	6	1	1	7
Cleveland, Ohio	146	88	37	14	3	4	2
Columbus, Ohio	197	123	47	14	6	7	6
Dayton, Ohio	128	91	24	7	2	4	10
Detroit, Mich.	214	132	47	21	9	5	10
Evansville, Ind.	35	25	7	3	-	-	2
Fort Wayne, Ind.	66	47	8	7	2	2	1
Gary, Ind.	22	12	3	7	-	-	-
Grand Rapids, Mich.	65	46	8	5	3	3	9
Indianapolis, Ind.	173	116	39	4	6	8	14
Madison, Wis.	38	24	8	1	-	5	2
Milwaukee, Wis.	133	101	25	7	-	-	14
Peoria, Ill.	45	35	5	2	2	1	7
Rockford, Ill.	52	32	11	8	1	-	2
South Bend, Ind.	40	29	8	1	1	1	3
Toledo, Ohio	117	73	24	7	6	7	10
Youngstown, Ohio	56	45	7	1	2	1	1
W.N. CENTRAL	727	530	112	45	24	16	41
Des Moines, Iowa	40	31	7	1	1	-	2
Duluth, Minn.	33	23	8	-	2	-	1
Kansas City, Kans.	19	17	-	1	1	-	4
Kansas City, Mo.	111	77	16	6	7	5	6
Lincoln, Nebr.	29	19	9	1	-	-	-
Minneapolis, Minn.	187	143	29	11	1	3	13
Omaha, Nebr.	86	65	13	6	1	1	1
St. Louis, Mo.	110	71	17	7	10	5	9
St. Paul, Minn.	68	53	8	6	1	-	6
Wichita, Kans.	44	31	5	6	-	2	-
S. ATLANTIC	1,108	667	238	126	33	43	51
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	290	167	75	34	7	7	22
Charlotte, N.C.	68	41	15	6	2	4	2
Jacksonville, Fla.	113	76	22	11	2	1	2
Miami, Fla.	81	34	17	22	2	6	-
Norfolk, Va.	56	30	15	6	2	3	5
Richmond, Va.	82	50	15	5	8	4	3
Savannah, Ga.	48	35	8	4	1	-	1
St. Petersburg, Fla.	54	41	4	3	2	4	2
Tampa, Fla.	160	107	35	15	2	1	11
Washington, D.C.	126	64	26	18	5	13	3
Wilmington, Del.	28	22	4	2	-	-	-
E.S. CENTRAL	785	501	189	66	29	20	60
Birmingham, Ala.	91	61	16	9	3	2	6
Chattanooga, Tenn.	92	50	23	9	3	7	5
Knoxville, Tenn.	88	63	19	4	2	1	6
Lexington, Ky.	75	45	20	6	1	3	6
Memphis, Tenn.	159	107	29	13	9	1	15
Mobile, Ala.	94	57	20	12	2	3	9
Montgomery, Ala.	59	40	13	4	2	-	3
Nashville, Tenn.	126	78	29	9	7	3	10
W.S. CENTRAL	1,536	935	286	178	81	53	89
Austin, Tex.	66	45	11	10	-	-	9
Baton Rouge, La.	60	33	7	16	2	2	2
Corpus Christi, Tex.	50	32	8	6	4	-	4
Dallas, Tex.	191	117	32	23	10	9	4
El Paso, Tex.	74	53	12	6	2	1	3
Ft. Worth, Tex.	100	58	23	6	9	4	3
Houston, Tex.	364	199	80	50	17	15	35
Little Rock, Ark.	75	40	16	9	5	5	3
New Orleans, La.	158	96	23	20	15	4	-
San Antonio, Tex.	218	134	43	20	11	10	15
Shreveport, La.	94	70	17	5	1	1	9
Tulsa, Okla.	86	56	14	7	5	2	2
MOUNTAIN	764	494	142	85	23	20	41
Albuquerque, N.M.	88	55	16	11	3	3	2
Colo. Springs, Colo.	56	40	8	7	1	-	6
Denver, Colo.	104	67	19	11	-	7	6
Las Vegas, Nev.	106	63	30	12	-	1	1
Ogden, Utah	24	18	1	3	2	-	-
Phoenix, Ariz.	180	105	37	23	10	5	16
Pueblo, Colo.	19	16	1	1	1	-	-
Salt Lake City, Utah	83	56	12	9	2	4	6
Tucson, Ariz.	104	74	18	8	4	-	4
PACIFIC	1,798	1,177	313	192	64	49	102
Berkeley, Calif.	31	22	3	1	1	4	2
Fresno, Calif.	75	56	11	4	3	1	3
Glendale, Calif.	25	21	3	1	-	-	1
Honolulu, Hawaii	82	60	8	8	5	1	9
Long Beach, Calif.	79	58	10	6	2	3	6
Los Angeles, Calif.	432	258	88	61	15	8	31
Pasadena, Calif.	20	9	7	2	-	2	2
Portland, Oreg.	146	97	29	11	6	3	7
Sacramento, Calif.	170	114	29	15	7	5	8
San Diego, Calif.	125	76	23	12	4	10	6
San Francisco, Calif.	151	79	33	32	5	2	3
San Jose, Calif.	166	117	23	16	3	6	17
Santa Cruz, Calif.	40	31	6	2	1	-	6
Seattle, Wash.	140	94	20	17	7	2	2
Spokane, Wash.	47	33	8	-	4	2	4
Tacoma, Wash.	69	52	12	4	1	-	5
TOTAL	12,326¶	7,782	2,411	1,295	448	382	684

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.
†Pneumonia and influenza.
§Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.
¶Total includes unknown ages.
U: Unavailable.

Eradication of Poliomyelitis — Continued

of 45. In 1991, the European Region reported 2% of the global total of poliomyelitis cases; 68% of the regional total was from republics of the former Soviet Union.

Southeast Asian Region. Reported coverage with OPV3 increased from 57% to 93%, while reported cases of poliomyelitis decreased from 22,814 to 6581; the number of countries in the region reporting poliomyelitis cases (nine [82%] of 11) was unchanged. In 1991, the Southeast Asian Region reported 46% of the global total of poliomyelitis cases; 91% of the regional total was from India.

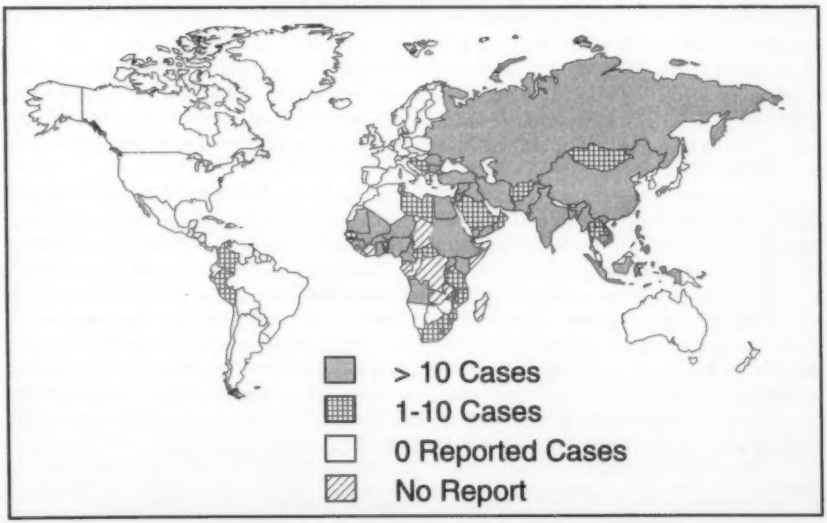
Western Pacific Region. Reported coverage with OPV3 increased from 89% to 95%, while reported cases of poliomyelitis increased from 2079 to 2615; the number of countries in the region reporting poliomyelitis cases decreased from six (17%) of 35 to five (14%) of 35. In 1991, the Western Pacific Region reported 18% of the global total of poliomyelitis cases; 98% of the regional total was from the People's Republic of China and Vietnam.

Reported by: Expanded Program on Immunization, World Health Organization, Geneva. Surveillance, Investigations, and Research Br, National Immunization Program; Respiratory and Enterovirus Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Since 1988, all six WHO regions have reported substantial progress toward poliomyelitis eradication, and poliomyelitis has apparently been completely eliminated from one region.[§] In the Region of the Americas, three major strategies

[§]In April 1993, Canada reported isolation of wild poliovirus type 3 from asymptomatic members of a religious group that objects to vaccination. This virus was likely imported because it was identical to a wild poliovirus type 3 that caused an outbreak among persons of a religious community objecting to vaccination in the Netherlands in 1992–1993 (*2*).

FIGURE 2. Incidence of poliomyelitis — worldwide, 1991



Eradication of Poliomyelitis — Continued

were used to eliminate poliomyelitis: 1) achievement of high vaccination coverage; 2) maintenance of sensitive systems of clinical and laboratory surveillance; and 3) implementation of supplementary vaccination activities, including national vaccination days biannually for all children below a specified age (usually age 5 years, regardless of prior vaccination status) and door-to-door vaccination campaigns in areas with a high incidence of poliomyelitis cases and/or low vaccination coverage (*3*).

In regions other than the Americas, vaccination strategies for poliomyelitis control have consisted primarily of routine vaccination. However, recent poliomyelitis outbreaks in highly vaccinated populations (*4,5*) and studies indicating suboptimal seroconversion to poliovirus types 1 and 3 following three doses of oral poliovirus vaccine in many tropical and subtropical regions suggest that routine vaccination alone may be insufficient to eliminate wild poliovirus infections and that supplementary activities, including national vaccination days, are necessary in countries where poliomyelitis is endemic (*6*).

In addition to the strategies used in the Region of the Americas, current global poliomyelitis eradication strategies include establishing and expanding polio-free zones and focusing additional resources on countries that are major exporters of wild poliovirus (*7*). The Global Poliomyelitis Eradication Plan of Action, endorsed by the EPI Global Advisory Group, emphasizes achieving effective surveillance of acute flaccid paralysis in all countries, initiating supplementary vaccination activities in all countries, and establishing a fully operational laboratory network in all WHO regions by 1995 with the goal of eliminating wild poliovirus transmission globally by the year 2000 (*7*).

Despite progress in increasing vaccination coverage and decreasing the incidence of poliomyelitis worldwide, there are at least five major barriers to global poliomyelitis eradication: 1) the presence of populations with suboptimal vaccination coverage, including unvaccinated subpopulations; 2) the failure of some countries and regions to identify poliomyelitis eradication as a priority activity (including the implementation of national vaccination days); 3) inadequate managerial skills to implement surveillance and vaccination programs effectively in certain countries; 4) suboptimal immunogenicity of oral poliovirus vaccine in many tropical and subtropical regions; and 5) inadequate commitment of financial resources at national and international levels (*3*).

The success of efforts to eradicate poliomyelitis in the Region of the Americas was based on the financial support of a broad coalition of national governments, international donor agencies (e.g., Rotary International, the United Nations Children's Fund, the Inter-American Development Bank, the Canadian Public Health Association, and the United States Agency for International Development), the Pan American Health Organization, and nongovernment community organizations. The creation of such coalitions—both regionally and globally—is of paramount importance in future efforts. In addition, success in global disease eradication requires that unaffected countries provide necessary assistance to geographic areas lacking adequate resources (*1*). The success of the global poliomyelitis eradication initiative will entail finding solutions to these financial, political, and technical challenges.

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Eradication of Poliomyelitis — Continued

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Emerging Infectious Diseases

Update: Outbreak of Hantavirus Infection — Southwestern United States, 1993

An outbreak of illness associated with hantavirus infection continues to be investigated by state health departments in New Mexico, Arizona, Colorado, and Utah; the Indian Health Service; and CDC, with the assistance of the Navajo Nation Division of Health (*1–3*). This report updates information regarding the outbreak and presents information on two cases that occurred in the 10 months preceding this outbreak.

Laboratory evidence of acute hantavirus infection has been confirmed in 15 patients who had onsets of illness from January 1 through June 30. Each of these patients has had one or more of the following: positive enzyme-linked immunosorbent assay (ELISA) serology with elevated immunoglobulin M titers indicating recent infection, seroconversion by ELISA, positive immunohistochemistry on formalin-fixed lung tissue, or amplification of hantavirus nucleotide sequences from frozen tissue. Of the 15 cases, 10 occurred in New Mexico, three in Arizona, and one in Colorado; 12 (80%) occurred among persons aged 20–40 years. Eleven patients died. Similar illnesses in an additional 23 persons, 10 of whom died, are being investigated for possible hantavirus infection.

Since June 6, a total of 668 rodents have been trapped in and around houses in 14 different rural sites. *Peromyscus maniculatus* (deer mouse) comprised 63% (range: 36%–88%) of all rodents trapped and 85% of those trapped in homes. Of the first 283 rodents tested, hantavirus antibodies were detected in 23%.

In June 1993, two persons were identified who had evidence of hantavirus infections in 1992. In November 1992, fever and acute respiratory distress occurred in a resident of the outbreak area. Recent serologic evaluation of an acute serum specimen obtained at the time of illness showed evidence of hantavirus infection. In August 1992, fever and myalgias followed by adult respiratory distress syndrome occurred in a person who resided outside the outbreak area; onset of illness was approximately 2 weeks after this person had returned home from a trip to the four-state area. The traveler had engaged in outdoor activities and was exposed to rodents and rodent excreta during both indoor and outdoor activities during the trip. A serum sample

Outbreak of Hantavirus Infection — Continued

tested in June 1993 showed elevated immunoglobulin G titers to hantavirus. Although a high immunoglobulin G titer in a single, recently obtained serum sample does not definitively establish the occurrence of a hantavirus infection at the time of illness, the serologic data and the clinical illness are strongly suggestive of hantavirus infection.

Reported by: F Koster, MD, H Levy, MD, G Mertz, MD, A Cushing, MD, S Young, PhD, K Foucar, MD, J McLaughlin, PhD, B Bryt, MD, Univ of New Mexico School of Medicine, T Merlin, MD, Lovelace Medical Center, Albuquerque; R Zumwalt, MD, P McFeeley, MD, K Nolte, MD, New Mexico Office of the Medical Investigator; MJ Burkhardt, MPH, Secretary of Health, N Kalishman, MD, M Gallaher, MD, R Voorhees, MD, M Samuel, DrPH, M Tanuz, G Simpson, MD, L Hughes, PhD, E Umland, MD, G Oty, MS, L Nims, MS, CM Sewell, DrPH, State Epidemiologist, New Mexico Dept of Health. R Levinson, MD, F Yerger, MD, B Allan, MD, Scottsdale; P Rubin, Phoenix; K Komatsu, MPH, C Kioski, MPH, K Fleming, MA, J Doll, PhD, C Levy, MS, TM Fink, P Murphy, B England, MD, M Smolinski, MD, B Erickson, PhD, W Slanta, L Sands, DO, Acting State Epidemiologist, Arizona Dept of Health Svcs. P Shillam, MSPH, RE Hoffman, MD, State Epidemiologist, Colorado Dept of Health. S Lanser, MPH, CR Nichols, MPA, State Epidemiologist, Utah Dept of Health. L Hubbard-Pourier, MPH, Div of Health, Navajo Nation, Window Rock, Arizona. J Cheek, MD, A Craig, MD, R Haskins, MPH, B Muneta, MD, B Tempest, MD, M Carroll, MD, LA Shands, MPH, JP Sarisky, MPH, RE Turner, L White, P Bohan, MS, Indian Health Svc. Div of Field Epidemiology, Epidemiology Program Office; National Center for Environmental Health; Div of Bacterial and Mycotic Diseases, Div of Vector-Borne Infectious Diseases, Scientific Resources Program, and Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: The identification of two persons with evidence of hantavirus infection that occurred in 1992 suggests that hantavirus infection has been present previously but was not recognized. Investigations are now in progress to identify whether changes in the local environment or other factors have been associated with the increased occurrence and/or transmission of this infection. Preliminary data from field investigations indicate that *P. maniculatus* is the likely reservoir of this virus. Although the exact mechanism of hantavirus transmission to humans is unknown, potentially hazardous exposures include direct aerosolization of urine and other potentially infective rodent body fluids, secondary aerosolization of dried rodent excreta, contamination of food, and direct contact with virus-bearing rodents or their excreta or saliva.

Additional studies are under way to identify practical and effective means of preventing infection caused by hantaviruses. Residents and travelers in New Mexico, Arizona, Colorado, and Utah are advised to avoid any activities that may result in contact with wild rodents or rodent excreta or disruption of rodent burrows. The following specific recommendations for residents and travelers are based on current knowledge of transmission of other hantaviruses: 1) avoid activities that can result in contact with wild rodents, disruption of rodent burrows, or aerosolization of dried rodent excreta; 2) store food appropriately to avoid contamination with rodents and rodent excreta; and 3) dispose of food and trash properly to avoid attracting rodents.

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Surveillance Summaries

Publication of *CDC Surveillance Summaries*

Since 1983, CDC has published the *CDC Surveillance Summaries* under separate cover as part of the *MMWR* series. Each report published in the *CDC Surveillance Summaries* focuses on public health surveillance; surveillance findings are reported for a broad range of risk factors and health conditions.

Summaries for each of the reports published in the most recent (June 4, 1993) issue of the *CDC Surveillance Summaries* (*1*) are provided below. All subscribers to *MMWR* receive the *CDC Surveillance Summaries*, as well as the *MMWR Recommendations and Reports*, as part of their subscriptions.

SURVEILLANCE FOR DIABETES MELLITUS — UNITED STATES, 1980–1989

Problem/Condition: In 1989, approximately 6.7 million persons reported that they had diabetes, and a similar number probably had this disabling chronic disease without being aware of it. Diabetes mellitus is the most important cause of lower extremity amputation and end-stage renal disease, the major cause of blindness among working-age adults, a major cause of disability, premature mortality, congenital malformations, perinatal mortality, and health-care costs, and an important risk factor for the development of many other acute and chronic conditions (e.g., diabetic ketoacidosis, ischemic heart disease, and stroke). Surveillance data describing diabetes and its complications are critical to increasing recognition of the public health burden of diabetes, formulating health-care policy, identifying high-risk groups, developing strategies to reduce the burden of this disease, and evaluating progress in disease prevention and control.

Reporting Period Covered: This report summarizes data from CDC's diabetes surveillance system, evaluating trends in diabetes and its complications by age, sex, and race for the years 1980–1989 (end year depending on data source).

Description of System: CDC has established an ongoing and evolving surveillance system to analyze and compile periodic, representative data on the disease burden of diabetes and its complications in the United States. Data sources currently include vital statistics, the National Health Interview Survey, the National Hospital Discharge Survey, and Medicare claims data for end-stage renal disease.

Results and Interpretation: These surveillance data indicate that the disease burden of diabetes and its complications is likely to grow as the population ages, that effective intervention strategies are needed to prevent diabetes and its complications, that prevention efforts need to be intensified among groups at highest risk, including blacks, and that important gaps exist in periodic and representative data for describing the burden of diabetes and its complications.

Actions Taken: CDC is currently exploring possible data sources to address the surveillance data gaps on blindness, adverse outcomes of pregnancy, and the public health burden of diabetes among minority groups.

Authors: Linda S. Geiss, M.A., William H. Herman, M.D., Merilyn G. Goldschmid, M.D., Frank DeStefano, M.D., M.P.H., Division of Diabetes Translation, National Center for Chronic Disease Prevention and Health Promotion, CDC. Mark S. Eberhardt, Ph.D., Office of Analysis and Epidemiology, National Center for Health Statistics, CDC. Earl S. Ford, M.D., M.P.H., Robert R. German, M.P.H., Jeffrey M. Newman, M.D., M.P.H., David R. Olson, Ph.D., Stephen J. Sepe,

Surveillance Summaries — *Continued*

M.P.H., John M. Stevenson, Ph.D., Frank Vinicor, M.D., M.P.H., Scott F. Wetterhall, M.D., M.P.H., Julie C. Will, Ph.D., Division of Diabetes Translation, National Center for Chronic Disease Prevention and Health Promotion, CDC.

LABORATORY-BASED SURVEILLANCE FOR MENINGOCOCCAL DISEASE IN SELECTED COUNTIES — UNITED STATES, 1989–1991

Problem/Condition: *Neisseria meningitidis* is a leading cause of bacterial meningitis and septicemia in the United States. Accurate surveillance for meningococcal disease is required to detect trends in patient characteristics, antibiotic resistance, and serogroup-specific incidence of disease.

Reporting Period Covered: January 1989 through December 1991.

Description of System: A case of meningococcal disease was defined by the isolation of *Neisseria meningitidis* from a normally sterile site, such as blood or cerebrospinal fluid, in a resident of a surveillance area. Cases were reported by contacts in each hospital laboratory in the surveillance areas. The surveillance areas consisted of three counties in the San Francisco metropolitan area, eight counties in the Atlanta metropolitan area, four counties in Tennessee, and the entire state of Oklahoma.

Results: Age- and race-adjusted projections of the U.S. population suggest that approximately 2600 cases of meningococcal disease occurred annually in the United States. The case-fatality rate was 12%. Incidence declined from 1.3 per 100,000 in 1989 to 0.9 per 100,000 in 1991. Seasonal variation occurred, with the highest attack rates in February and March and the lowest in September. The highest rates of disease were among infants, with 46% of cases in those ≤2 years of age. Males accounted for 55% of total cases, with an incidence among males of 1.2 per 100,000, compared with 1.0 per 100,000 among females (relative risk [RR]=1.3, 95% confidence interval [CI]=1.0–1.6). The incidence was significantly higher among blacks (1.5 per 100,000) than whites (1.1 per 100,000), with a relative risk of disease for blacks of 1.4 (95% CI=1.1–1.8). Serogroup B caused 46% of cases and serogroup C, 45%. Thirty-eight percent of isolates were reported to be resistant to sulfa; none were reported to be resistant to rifampin.

Interpretation: The decline in incidence of meningococcal disease from 1989 to 1991 cannot be explained by any change in public health control measures; this trend should be monitored by continued surveillance. The age, sex, and race distribution and seasonality of cases are consistent with previous reports. The proportion of *N. meningitidis* isolates resistant to sulfa continues to be substantial. A relatively small proportion of cases is potentially preventable by the use of the currently available polysaccharide vaccine, which induces protection against serogroups A, C, Y, and W135 and is effective only for persons >2 years of age.

Actions Taken: Current recommendations against the use of sulfa drugs for treatment or prophylaxis of meningococcal disease unless the organism is known to be sulfa sensitive should be continued. Since resistance to rifampin is rarely reported, it continues to be the drug of choice for prophylaxis. The development of vaccines effective for infants and vaccines inducing protection against serogroup B would be expected to have a substantial impact on disease.

Authors: Lisa A. Jackson, M.D., Jay D. Wenger, M.D., Meningitis and Special Pathogens Branch, Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC. The Meningococcal Disease Study Group.

Reference

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Notice to Readers

Change in Source of Information: Availability of Varicella Vaccine for Children with Acute Lymphocytic Leukemia

An investigational, live, attenuated varicella vaccine continues to be available free of charge through Merck Research Laboratories (West Point, Pennsylvania) to any physician requesting it for certain pediatric patients (aged 12 months–17 years) with acute lymphocytic leukemia (ALL) (*1*). However, the source of information about eligibility criteria and vaccine administration has changed (*1*) and is now available from the Varivax Coordinating Center, Bio-Pharm Clinical Services, Inc., 4 Valley Square, Blue Bell, PA 19422; telephone (215) 283-0897.

An Investigational New Drug application for the vaccine is on file with the Food and Drug Administration. Varicella vaccine is being provided to this group of patients for use through a study protocol to monitor and evaluate safety. Patients must meet specified criteria, including no clinical history of varicella and continuous remission for at least 12 months. The physician must provide information outlined in the protocol, and the protocol and consent form for the study must be approved by the institution's Investigational Review Board.

Reported by: National Immunization Program, CDC.

Reference

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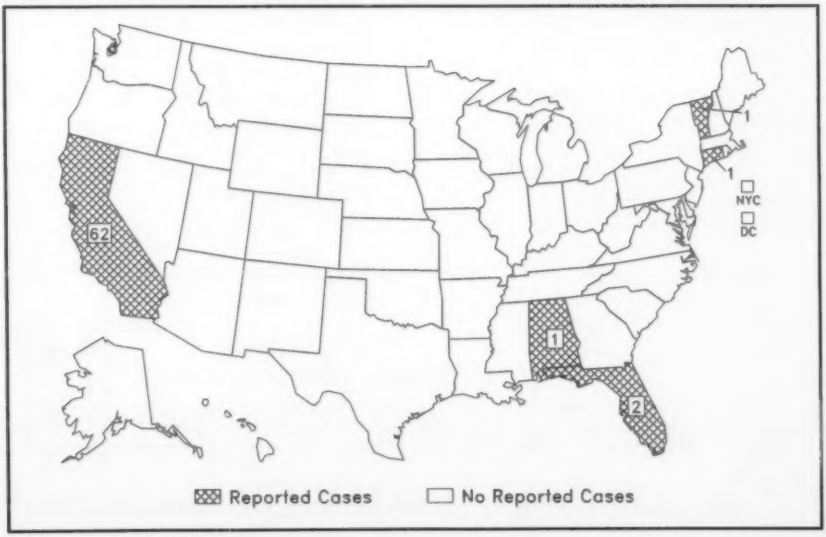
Reported cases of measles, by state — United States, weeks 21–25, 1993



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